

Work Order ID 58935

Thursday, May 20, 2010 9:07:18 AM



Page 1

Item ID: D205-596-107

Accept



Setup Start

Revision ID:

Item Name: Crosstube Aft Extended

Stop



Start Date: 5/20/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/7/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Handwritten signature

Date: 10-5-20 Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D205-596

Rev B

100



DOCUMENT CONTROL

0.00

DC

Memo

0.00

Document Control

Photocopy D205-594 bluefile & type labels per PPP D205-596-107 CHG002

110



BENDING MACHINE - CROSSTUBES

0.00

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend as per Dwg D2890 using CNC bender program

Handwritten: (IX)

Handwritten: MB 10-05-26

120



Crosstubes

0.00

Crosstubes

Memo

0.00

Crosstubes

Mark 20.36" for cutting from tangential line in the straight section from D2890 as per Dwg wall template.

Handwritten: Ph ->

Handwritten: NA MB 10-05-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D205-596-107 PAR #: _____ Fault Category: x-tubes NCR: (Yes) No DQA: _____ Date: 10/06/02
 Resolution: SCRAP Disposition: SCURD QA: N/C Closed: X Date: 10/06/02

NCR: 58935		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/05/02	#100	x-tube over heat, tube come in too far faster than expected	10/05/02 for ↓	→ Scrap + Destroy the tube.	MS 10-05-26	10/05/02	10/05/02 for	10/05/02
		R.C. Process.	10/05/02 PST 042	→ Change Pailo to 591 to run checks between program 15 to 17.	10-05-26	10-5-26	10/05/02 PST 042	10/05/02

NOTE: Date & initial all entries

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 QC Quality Control	QC15- Crosstube Dimensional Check Memo	0.00 0.00							
140 Crosstubes Crosstubes Crosstubes	Crosstubes Memo 1-Cut as per Dwg D205-596-107 2-Deburr & Inspect for surface damage Polish cut surface.Scribe part # and batch # on one end of tube.	0.00 0.00							
150 QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							

SCNAP

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 HandFXtube Hand Finishing Crosstubes	Crosstubes Chemical Conversion HandFinishing Memo Touch up ends of the tube with Chemical Conversion Coat per QSI 005 4.1	0.00 0.00							
170 QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00							
180 SprayPaint Spray Painting	SprayPaint Memo 1-Prime inside and outside with Immron per QSI 005 4.2	0.00 0.00							

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190



QC14- Inspect Spray Paint

0.00

QC

Memo

0.00

Quality Control

200



Crosstubes

0.00

Crosstubes

Memo

0.00

Crosstubes

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe
2- Apply magnobond 6398 as per dwg D205-596-107 Magnobond 6398
Batch: _____ EXP: _____
3-Inst

210



QC5- Inspect part completeness to spec on W/O

0.00

QC

Memo

0.00

Quality Control

SEN AB

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Required Date: 6/7/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D205-596-107								
	Location: _____								
	PPP Rev: _____								
230	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							
Quality Control									

SC n VAP

MF
10-5-31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, May 20, 2010 9:07:24 AM

Page 1

Work Order ID: 58935



Parent Item: D205-596-107



Parent Item Name: Crosstube Aft Extended

Start Date: 5/20/2010

Required Date: 6/7/2010

Comments: IPP Rev:D 05.03.21 Added bending procedure KJ/JLM

Start Qty: 1.00

Required Qty: 1.00

IPP Rev:E 08-01-10 ECN 1075 DD

IPP Rev F 08.04.28 Added bending & mat'l EC verified by: DD

Component Item ID/ D2940-1	Replacement	Mfg/ Manufactured	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Qty	Date	Status
			No			200	Each	45.0000	2			
Support												

Location

Loc Qty

Loc Code

LG

45

45203

1

47748

16

52752

8

57338

20

D6008-180

Manufactured

No

110

Each

11.0000

1



Crosstube Extrusion

Location

Loc Qty

Loc Code

LG

11

46779

11

MS21920-28

Purchased

No

200

Each

55.0000

4



Clamp(per MIL-DTL-8783C)

Location

Loc Qty

Loc Code

FG

5

105884

5

LG

50

112624

2

112863

46

113776

2

Handwritten signature and scribbles

MB 10-05-26

(LX)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 2

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Parent Item: D205-596-107



Parent Item Name: Crosstube Aft Extended

Start Date: 5/20/2010

Required Date: 6/7/2010

Comments: IPP Rev:D 05.03.21 Added bending procedure KJ/JLM

Start Qty: 1.00

Required Qty: 1.00

IPP Rev:E 08-01-10 ECN 1075

DD

IPP Rev F 08.04.28 Added bending & mat'l

EC

verified by: DD

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Qty per Kit	Qty	Date	Status
D3595-063-530		Manufactured	No			200	Each	96.0000	4			



RUBBER CUSHION



Location

Loc Qty

Loc Code

FP

96

50030

20

51776

76

Scrap

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

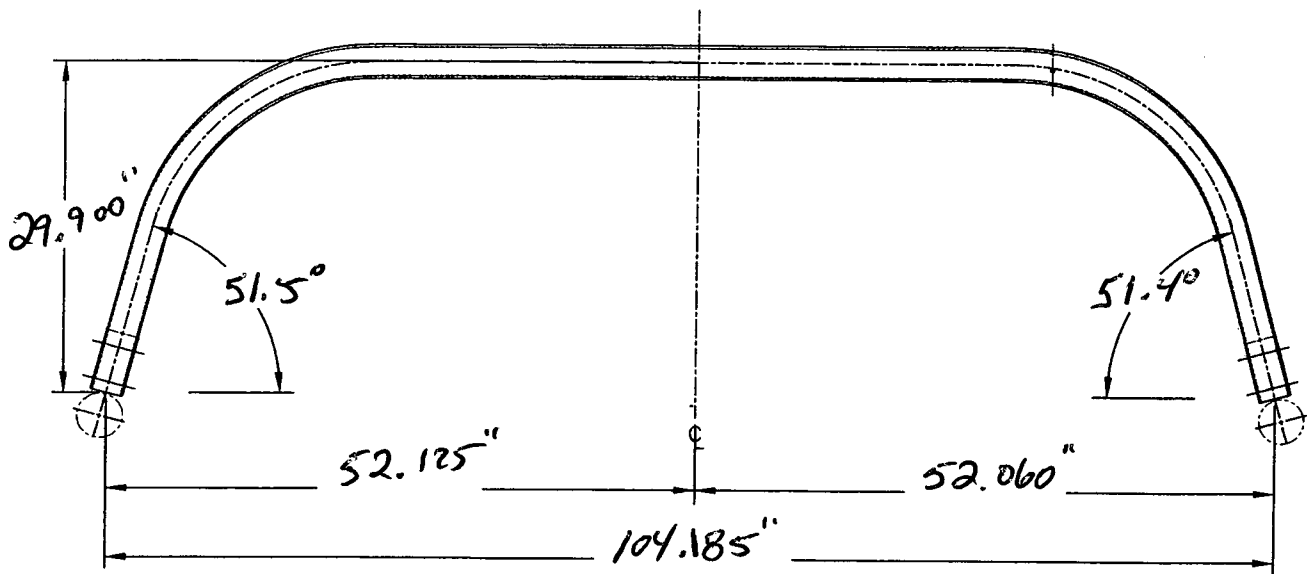
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	58935
Description: Crosstube High-High Aft		Part Number:	D205-596-107
Inspection Dwg: D205-596-107 Rev: B		Page 1 of 1	

Required Dimension	Min	Max
Height	29.7	29.9
1/2 Span	52.4	52.6
Angle	49	52
Total Span	104.8	105.2



Comments
SCRAP 10.05.26

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	08.04.21	Dwg Rev updated	KJ/JM	

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NOTE: Date & initial all entries

PARTS LIST:

Qty	Part Number	Description
X	D205-596-107	CROSSTUBE ASSEMBLY, HI-HI AFT
1	D6008-180	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURE FROM D6008-180
FINISHED LENGTH = 127.28 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH
VIBRATING STYLUS
- 7) WEIGHT: 50 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT
WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION
AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1
SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
**NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-28 CLAMPS WITH LONGER OR SHORTER
MS21920-XX CLAMPS TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF
1.5 THREADS IN SAFETY ON THE NUTS.**
- 13) TORQUE CLAMPS 80 TO 100 IN-LB

SHOP COPY

RETURN TO

ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. 38935PS105-20**DEO ATTACHED**

B	SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-1009 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-530 CUSHION	MB	07.12.03
A	NEW ISSUE	DS	02.11.20
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D205-596-107	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSEMBLY, HI-HI AFT	NTS
DATE	07.12.03	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

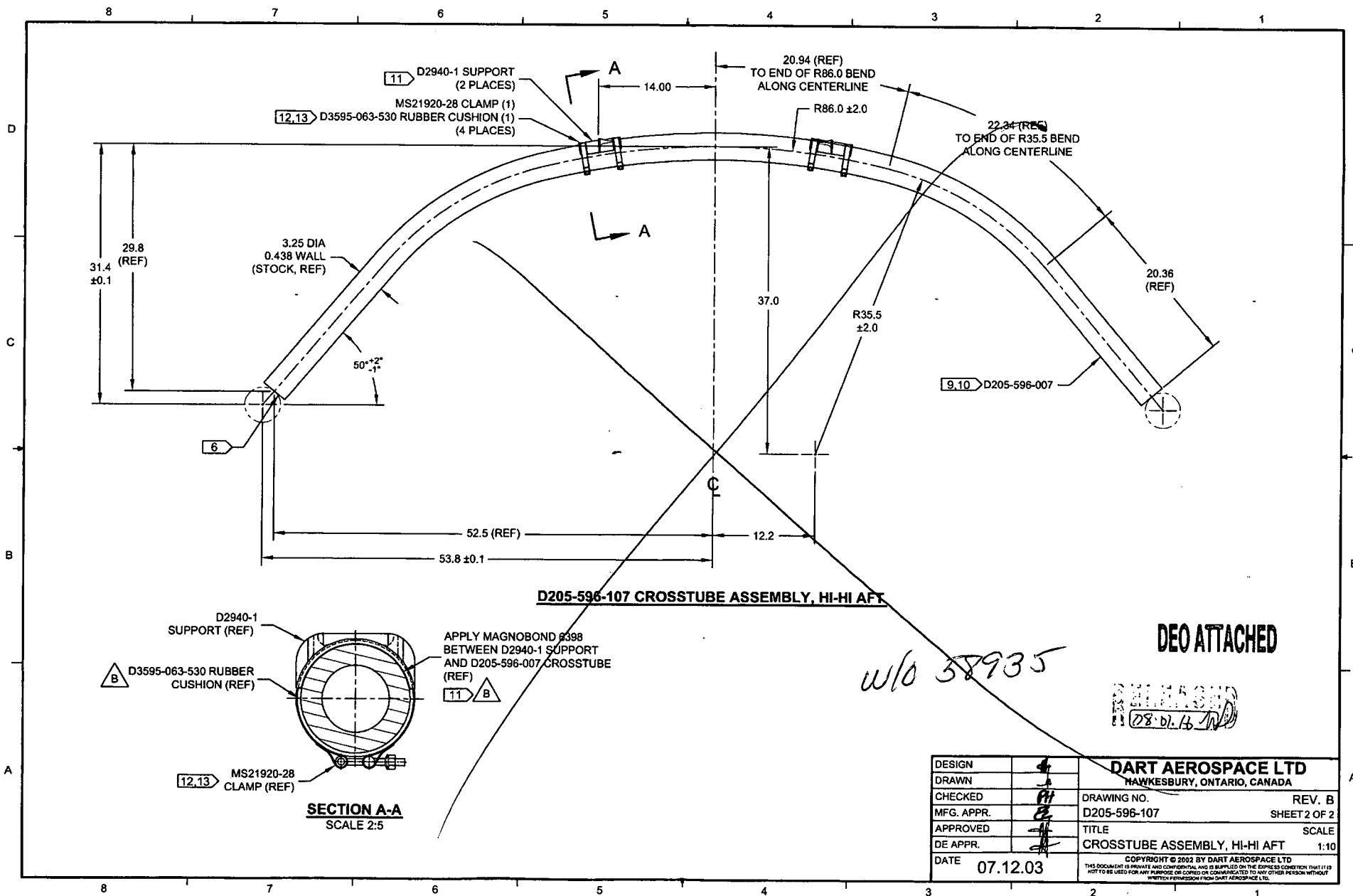
W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries



w/o 38935

DEO ATTACHED

RELEASED
28.01.16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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DRAWING NO. D205-596-107	TITLE CROSSTUBE	REV. B	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D205-596-107-B-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>1/1</i>	CHECKED <i>PH</i>	MFG. APPR. <i>ER</i>	APPROVED <i>MD</i>		DE APPR. <i>#</i>		
DATE 09.05.01	DATE 09.05.15	DATE 09.06.15	DATE 09/06/16		DATE 09/06/16		

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D205-596-107B	CROSSTUBE ASSEMBLY (214 HI-HI AFT)

THE D205-596-107B CROSSTUBE HAS THE SAME PARTS LIST AS THE D205-596-107 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D205-596-107 CROSSTUBE.

RELEASED
09/06/22 N/P

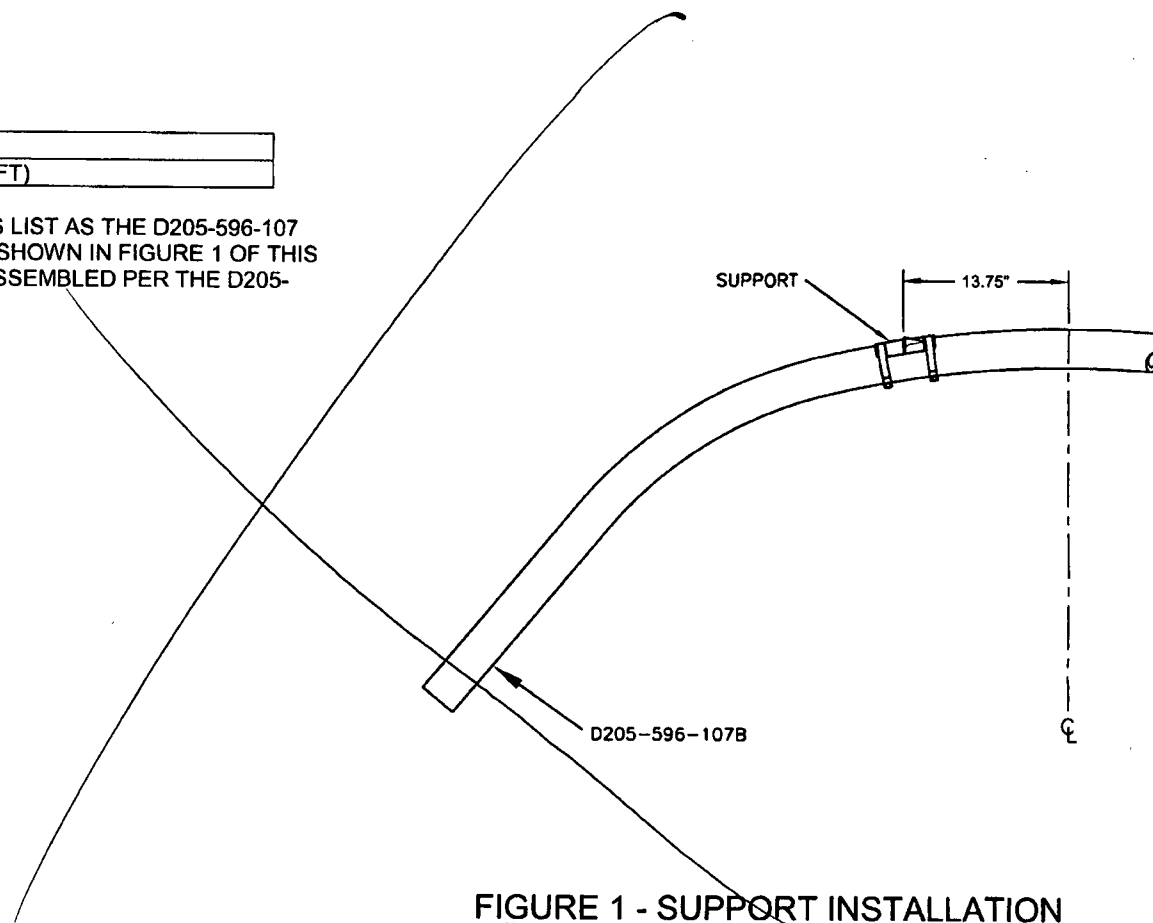


FIGURE 1 - SUPPORT INSTALLATION

w/lo 58935

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